

# REVISITING ARGUMENTATIVE RESEARCH METHODOLOGY

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## Abstract

*Argument is a possible strategy, technique, method and research methodology particularly suited to IS research. Aristotle, maybe the greatest of all empiricists, argued that a well-conducted argument is the only acceptable way to persuade others of an interpretation of empirics. This paper argues that there are advantages to the way research is designed, and received, if IS researchers explicitly adopt the notion of presenting their research as a well reasoned, well balanced **argument**. This is with or without multiple forms of empirical evidence.*

**Keywords:** Research methodology, argumentation.

## Introduction

Many writers on research strategy appreciate the connection between research and argument including those as long ago as Aristotle and more recently Walton (1998) and Habermas. Given the increasing use of the interpretive methodologies it seems appropriate to re-iterate the research and argument (debate). This paper will consider the similarities between the two concepts and will argue that: "*Research is best designed and communicated in the form of a public argument.*"

The purpose of this paper is therefore to demonstrate that, thinking about research as being an *argumentative process* improves research quality and the research experience by; encouraging eclectic methods replacing a confused terminology; distinguishing between reasoning as a research method and as a communication strategy and by encouraging researchers to concentrate on their audience.

The reasoning evidence presented first considers the definition and attributes of a good argument. The argument for argument then continues with explaining the need for change due to current increase in popularity with interpretive methods. Evidence to support the use of argument as a research strategy is then presented via discussions of the relationship between argument and theory; the relationship between observation and argument; the fallacy of the perfect study and the relevance of argument in communicating research. As a practical example of this perspective, a suggested *Research Proposal* terminology is then provided (see the appendix).

## What is an Argument?

So, what exactly is the argumentative research strategy, and how does it overcome some of the problems inherent in doing effective IS research? First, what is an *argument*? An argument is the noun of arguing or argumentation, the directed construction of convincing evidence (Perelman and Olbrechts-Tyteca, 1969; Emmeren et al., 1987), it being the one line conclusion that is supported by evidence. Argument can be a technique such as in predicate logic, a method such as in hypothesis and methodology as using the dialectic between reasoning and observation, and between competing schools of thought, to create group consensus to a universal audience.

Evidence presented in order to support an argument can be initially sub-divided into, observation and reasoning (logic). Observation includes participant observation, ethnography, experiments and psychoanalysis, and can be made with any of the human senses, eyes, ears, taste, smell or touch (see later). The second type of evidence, reasoning (or logic) uses the mind

A review of the attributes of a good argument identifies many of the features that support the use of argument as a superior research strategy. The following attributes of a good, effective argument have been established from a reading of Apotheloz et al. (1993), Baker and Huntington (1905), Emmeren et. al. (1987), Gardiner (1901), D. Kuhn (1991), Messimer (1990), Perelman and Olbrechts-Tyteca (1969), Ziegelmüller and Dause (1975) and others.

An argument will be more convincing if it has an explanation function as well as a definition of its limitations. This will also prevent any misguided counter arguments.

A convincing argument usually needs empirical testing. Popper calls this being verifiable.

A good argument should be integrated with, or at least acknowledge, other arguments. Not only should the argument be well integrated with itself, it would be useful if it could be related to other established arguments or facts. This is another way of saying whether your argument is a sub-set of another argument or a meta-argument.

It is preferable if an argument has surprise. An argument has much more power and purpose if it surprises people, that is, if it shatters their illusion. The surprise content reveals whether the argument is confirming or contradictory.

A further attribute can be deduced from the above suggestions. It would normally be expected that an argument will include multiple pieces of evidence. It will be eclectic. This means that using the argument approach to designing and communicating research encourages multiple methods. It is not methodology based. There is a lot of empirical evidence (e.g. Armstrong, 1985) on the effectiveness of multiple methods. While guided only by a desire to be convincing the argumentative method does not directly support any particular evidence collection methodology (quantitative, qualitative, interpretive, grounded, ethnography etc.).

An argument will need to start from a common base with the audience. An economist might call this stating the assumptions; a sociologist might call it determining the shared epistemology. For example, is it a fact that there is a range of useful methodologies? If your audience agrees, then this can be used as a fact in the argument. A failure to start from common ground impedes communication.

Many of these attributes will be referred to as evidence in support of the argument for argument as a research strategy. This is presented in the following discussion.

## **Need for Change**

The philosopher Aristotle was a hugely prolific medical empirical researcher; however he knew that his empirics needed explanation. So, he recommended public debate, or dialectic reasoning as important in the advancement of knowledge and consensus understanding. Walton (1998) calls this "deliberation dialogue", an alternative name may be reasoned debate or argument.

The dominance of the scientific method of research in the pursuit of the so-called objective, context free knowledge served to submerge the significance of the argument in the research process. There is a false implicit message that if you do the experiment right, then you will get results no-one will argue about. Walton (1998, p78) a philosopher very interested in forms of argument makes an interesting observation.

It is an interesting and much disputed question in the philosophy of science whether (axiomatic logic) is an appropriate model for scientific reasoning. .. The current view in this debate seems to favor the notion that (this) is not a good model of scientific reasoning, or at least not one that is very realistic in approximating actually reason... sociological studies (show)... the type of dialogue (science) uses seems much more like a persuasion dialogue...

So, it would appear that the perception of science as involving argument has been a victim of the positivist movement. Maybe now the interpretivist methods is sufficiently established to allow the perception that research is an argumentative process involving iterations between a researcher and his/her audience back into the methods books.

There are many problems with current IS including issues relating to the qualitative versus quantitative research methods debate; confusion over the language and terminology used in research and the perceived lack of objectivity in many research studies. The following discussion will outline these problems and suggest how the use of the argument strategy for research will provide a solution to these problems.

## **Argument and Theory**

One of the problems with current research strategies is the misuse of certain concepts and lack of standardised terminology. Terms such as "theory" and "thesis" are commonly used in research, however they are not easily defined or explained, which can lead to confusion and a lack of understanding by students and new researchers. It is suggested that the more widely accepted and understood term "argument" could be used instead of "theory" in order to overcome this problem. Closer investigation of the relationship between the theory and argument serves to support this suggestion.

The following definitions and descriptions of the term "theory" help us to identify the connection between theory and argument. The word theory comes from the Greek, to speculate. Hanson (1958) describes a theory as "a cluster of conclusions in search of a premise." Belkaoui (1987) defines a theory as a logically related set of ideas or propositions used to explain something. Are these not a definition of an argument?

Gardiner connects the terms theory and argument directly (and confirms the explanations attribute of arguments).

For the essential part of every argument, which is worthy of the name, is that it offers the reader an explanation of the facts, a theory or a policy, better, more rational, more thorough, or more for his personal advantage - than that which he or someone else has maintained (Gardiner 1901).

Messimer, in her book about good argument, is not confused.

A theory is a complex argument (Messimer, 1990)

The similarities between theory and argument extend beyond the definitions. Both theory and argument provide the researcher with their eyes (paradigm, intellectual framework) and provide a focus for the research. For example, when wading through data, facts, or previous studies, the theory (speculation) suggests what is relevant. If a researcher wanted to test a theory that says the optimal information system depends on company size, industry and culture, he or she would only need to collect size, industry and culture information. Using the same example, if the researcher wanted to argue that the appropriate IS design was only dependent on size, industry and culture then this data would be collected. Theory and argument seem similar in this regard.

Both theory and argument should be verifiable (testable). The theory that: God wears green socks, would not be verifiable, and thus not really a theory. To *argue* that God wears green socks would be impossible because no evidence (especially empirical) could be presented. The need for empirical evidence in an argument *immediately* identifies its viability. With a theory it is necessary to ask for empirical proof while an argument without empirical proof is unconvincing. Again the terms seem similar with maybe a small advantage going to the argument approach.

One area in which the argument approach would be better than traditional theory based research is in dealing with rival “theories”. In theory based research, rival theories are often ignored. Under the argument approach there is less opportunity to neglect these “counter” arguments. The argument approach starts in the same way as the theory approach, with the selection of what the researchers see as the best alternative. The preferred alternative becomes the main argument. The evidence that convinced the researchers of this will need to be carefully presented. Next, the researchers will need to identify what their critics are likely to say about their selection and present careful evidence to dismiss these counter arguments. The need to anticipate counter arguments in order to be convincing means that the approach helps ensure certain unpopular arguments do not get forgotten. Convincing argument to a knowledgeable audience needs to anticipate counter evidence in the same way a defense lawyer needs to anticipate the evidence of the prosecution.

On balance therefore, it would appear that given the similarities between the terms theory and argument, and the fact that argument is a more widely accepted and better-understood term, it could be used to replace "theory" in research. This is not mere semantics, but a return to a much more powerful research tool. The “research is an argumentative process” approach clarifies that research is about convincing an identified audience, making researcher’s bias explicit, using the historically supported use of the dialectic to create knowledge, enabling use of the everyday courtroom analogy and providing a process that integrates reasoning, observation and interpretation as forms of supportive evidence.

### **Observation and Argument**

Another problem with current research methods is what the scientists would, to the amusement of the interpretive researchers, call the embarrassing evidence of bias or lack of objectivity, in so many pieces of research. The scientific approach assumes individual researchers can be objective. Broad and Wade’s (1982) review of the dishonesty in scientists provides extreme evidence that this assumption cannot be trusted. For example, much of Popper’s work was concerned with autocratic Governments distorting “scientific evidence”

and, he like Plato, seek the use of public debate (rhetoric, argument) to come to an objective consensus by a universal audience.

... with the help of argument, we can in time attain something like objectivity...(Popper, 1971)

The interpretive methodologists do not expect one person to be able to provide a universal world. They expect discussion (dialogue) and shared debate (dialectic reasoning) to expose an interesting range of worldviews. The argument approach is centered on researchers publicly admitting their bias or lack of objectivity.

Cohen (1994), a historian, joins all the empiricist philosophers in arguing that observation is the key to research (science), but it does need public debate in order to achieve a universally accepted interpretation. This dialectic between observation, which includes experimentation (see later), and argument has also been made with Galileo.

Unlike the textbook writers, some historians, such as Alexandre Koyre, have seen Galileo as an idealist rather than an experimental physicist; as a man who used argument and rhetoric to persuade others of the truth of his theories (Broad and Wade, 1982).

So keen was Galileo to argue that it appears he would sometimes make up results from mythical experiments, in order to convince his universal audience. In his dealings with the authority of the Church, Galileo is sure to have had a very clear appreciation that research involved argument, with experimentation only being one weapon in the arsenal required to get his ideas accepted.

The way argument uses experiment, is to both choose what experiment is done and then provide an explanation of what is observed. Naturally, an experiment has to be very carefully done, trying to be as unbiased as possible. If not, then those who want to counter argue will be able to dismiss the findings easily.

What is observation, and why does it need argument? Experiments are observation, albeit controlled observation. The connection between observation and argument has been known a long time. Bacon, the philosopher, (1561-1626) used a pleasant *bee* metaphor to explain the connection between observation and argument. He suggested that observations were like the pollen collected by bees, and thoughts were like their spittle. Not until the pollen is combined with the spittle, does it become honey.

In research the preference must be for direct observation (unless a comparison is sought), that is seeing, hearing, touching, smelling things first hand. It needs less interpretation. The more direct the observation is the more likely the research is likely to get the observation right. It is also more convincing. However, even direct observations have to pass through the brain of the researcher and this can cause distortions. Indirect observation that goes through two brains and is communicated through conversation is expected to be open to some extreme distortions. Observer independence, in the sense of actually recording an observation correctly is less likely the more indirect the observation. Put the other way about, the more indirect the observation the greater the need for argument to explain the distortions in the observation.

The assumption of observer independence, even in the case of direct observations, has been seriously and continually attacked from many quarters including physical scientists, historians (Kuhn, 1970), philosophers (Feyerabend, 1975), those interested in fraud in science (Broad and Wade, 1982), managers (Morgan, 1983), psychologists and empirical researchers. Even Popper (1971) does not seem comfortable with the idea that either individuals or small schools-of-thought can be trusted to be unbiased in their research. The argument (debate,

arbitration, co-operation) approach provides a rational way of trying to make this distortion explicit.

By assuming that an advocate, who accepts that she has biases, conducts an experiment, the argument approach encourages discussion to reveal these biases. So, while argument is best served by unbiased observation this ideal is not expected. Argument can be used to provide a forum to openly discuss these biases. It is a method for testing objectivity. The use of argument to expose bias may also encourage more thorough research. The competition of public debate may act as a motivator.

When arguments are bold, provocative and all encompassing their advocates are frequently ardent, passionate and partisan (Baker and Huntington, 1905).

Arguing for something requires far more commitment than pretending you are presenting as unbiased both sides of the argument. For example, I might be able to list the arguments for or against the big bang theory in an unemotional way. This is most likely because I do not really know much about cosmology! If I had studied the topic for many years it is likely that I would have formed a strong intuitive impression. A desire to confirm this impression through careful observation may provide the motivation to complete a rigorous series of experiments and to continue doing so after a sustained series of attacks on my ideas. Those who care about an issue and understand they will have to argue their position are more likely to be thorough. Thus, getting researchers to argue has advantages, it requires more commitment and makes biases more transparent.

Nor is it evident that objectivity is a necessary qualification for the practicing scientist. Most researchers believe passionately in their work, in the techniques they rely on and the theories they are trying to prove. Without such an emotional commitment, it would be hard to sustain the effort. When the technique proves to be ambiguous or the theory untenable, the researcher learns to pick up the pieces and start over anew. Many scientists want passionately to know the truth. It is only the literary conventions of scientific reporting that compel scientists to feign detachment and pretend that when they put on a white coat they turn into logical automatons. Objectively it is an abstraction of the philosophers, a distraction for the researcher (Broad and Wade, 1982).

Using the argument strategy validity is determined by the need to convince, which will vary depending on the audience, which in the case of business research can include scientific, managerial and "sociology" based audiences. The argument strategy does not side with any one type of evidence, but rather supports the use of the method most appropriate for the situation. Often, audiences require both quantitative and interpretive evidence in order to be convinced.

### **The Perfect Study**

The common myth of research that can be put aside by using the argument approach is the belief in the possibility of a perfect piece of evidence. It is not possible to conduct any study that cannot be criticised. It is wrong to pretend that any research findings will not have to be carefully argued, no matter how carefully they are done, and typically to a hostile audience. That a study will clearly prove something once and for all or that some good empirical evidence will settle the matter once and for all is the rhetoric of those who have never tried to publish research. No matter how careful you are, it is impossible to conduct a piece of research that cannot be criticised. Every method has its limitations, every proof its critics. Nelson et.al., (1987) argue that this is just as true in mathematics as in management research. Lakatos (1978) agrees.

...no factual proposition can ever be proved from an experiment.

How then is a researcher to proceed? It is suggested here that the time old method of winning by the *weight of evidence* be used. Rather than hoping to convince your audience by presenting one good study, it may be necessary to present several, hopefully each one in some way different from the last. So, while any one study might have its limitations, the combined results are convincing. Each study is another piece of evidence presented to support the main argument. To be particularly convincing the evidence may be designed so as to include some logical reasoning, various forms of observational evidence, and some expert testimony; a triangulation of evidence.

The argument strategy encourages the presentation of multiple forms of evidence, and so encourages researchers to consider the limitations of their studies and to think of ways of overcoming these limitations. This must be good for the research. Evidence is even more convincing if a series of studies have been designed with a strong critic in mind. If a critic determines the design of an experiment, and it turns out to support the argument, then the critic should be more convinced. This, of course, is a practical interpretation of Popper's falsification ideas. Acknowledging the presence of critics encourages the idea of anticipating disconfirming evidence.

### **Communication**

The word research is really an abbreviation for "research and publication." Research needs to be communicated. This brings us to another, (still related) myth of research, that findings can be communicated without the need for argument. First, communications require the use of language, which can be distorting. The image in one person's head does not transfer perfectly to another person's head through language. Anybody asking for travel directions in a strange place will know this.

Research in the physical sciences is conducted on subjects that cannot talk typically molecules. The methods found useful for such research are unlikely to make use of language. Language is not something a scientist expects to have to study as a research method, they play down its importance. This means that it becomes very easy for some researchers to become a bit shortsighted about its usefulness, and its relevance in quality research. However, they need communication skills to explain their research

In order to communicate research effectively it is necessary to have a clear understanding of the role of argument in language. Inter-researcher communications need an argument. This confusion between "list of facts" and reports often comes out in an inexperienced students literature reviews. The poor student will produce a form of annotated bibliography, the review will not be arranged as evidence in support of the thesis, there will be no argument. By excluding argument it is possible to exclude meaningful communications. This is another reason why research should be thought of as an argument

### **Conclusions and Implications**

This paper has tried to convince that there is considerable advantage in explicitly understanding the research process to be one of public debate or argument. The increasing acceptance of the interpretivist methodology is overcoming some of the delusions of the positivist stance especially with regard to objectivity and "unquestionable" observation. Both research and argument are interactive process involving the researcher and the audience. Both argument and research demand careful collection of convincing evidence; both utilize explanation and observation; both are interwoven with the concept of theory. However, thinking of research as an argumentative process makes the testing of rival theories (counter

arguments), and the need for directed empirical evidence, more explicit. Those who accept that there needs to be interaction between the researcher and those researcher in meaningful social inquiry (including IS research) must surely therefore accept that there also needs to be an explicit relationship between the researcher and his/her audience.

By explicitly accepting that the research process mirrors the argumentative process observers get to admit their bias by selecting the argument, rather than implicitly implying they are impartial even to the acceptance of the research results. The expectation of criticism, and the need for multiple studies in order to win an argument, all discourage the fallacy that any one study will be totally convincing. Each piece of evidence is expected to be unconvincing to someone, the argument is won by the weight of multiple supporting evidence and the negation of counter evidence. The context of the audience is everything.

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## APPENDIX 1

### RESEARCH PROPOSAL STRUCTURE: The "Argumentative Methodology"

This guide for designing a research proposal is an application of the “research through argument” perspective. It utilises the perspective of research being what Crosswhite [1996] and Walton [1998] call persuasive dialogue reasoning, that is, it assumes you are trying to convince hostile, competent, opponents of your thesis (conclusion, claim). It aligns with Plato and Aristotle’s dialectic reasoning, Hegel’s thesis, antithesis, synthesis and Habermas’ communicative action. Moreover, it uses the critical methodology of identifying the human concerns that are acting upon the object of the study, and encourages suggestions for improvement (social action).

It is important that any evidence be presented as if addressed to the worst opponents of your argument. Any counter arguments (rebuttals) should be fully anticipated and the empirical method should be designed as if done so to counter your most able opponents.

*[The bold letters indicate possible headings, these are followed by text providing brief explanation, and sometimes a simplified example].*

#### **THE ARGUMENT**

The argument approach requires that the research issue be stated as a one-line claim at the very beginning of the paper. In one short sentence state what you intend to argue, or more conservatively state that you intend to investigate a claim. Having an argument, rather than a research question, indicates some familiarity with the topic. The more surprising your argument, the more interesting your topic.

***Eg: That the role of artificial intelligence (AI) research should be designed to compliments humans need for communicative action rather than attempt to replace them.***

#### **Definitions**

Briefly explain any technical keywords used in the argument. This requirement forces consideration of the audiences background.

*Eg. By AI ... it is meant...*

*By designed it is meant...*

*By communicative action... it is meant...*

*etc etc...*

#### **Motivation.**

This shortish section explains why the reader should spend time reading your work. Its aim is to persuade the reader to keep reading. Both the motivation of the writer and motivation for

the reader may be presented. The author should reveal their background and therefore biases in this section. Reveal who is doing the interpretation that is the thesis.

*Eg: The careful development of AI is important because...this study is important because it ...*

*The author became involved in this study because...etc...their background is...*

## **THE EVIDENCE**

The next step is to present briefly what evidence will be brought to support your argument (claim). This might take the form of other writers' comments, other researchers' findings, some logical reasoning on your part and/or observations (empirics) designed and conducted by you. This part not only outlines your evidence but it also locates your argument in relation to previous arguments. [This is sometimes called a literature review]. This section will be characterised by the phrase, "Jones [1999] found that ... her method was..." however, Care must be taken to avoid the use of "authority," without justification of the basis of that authority. Saying, something is correct because person X said so is not convincing unless you have proved the expertise of person X. An analogy can be made with the courtroom, expert witnesses need to have their credentials outlined for the jury.

The evidence presented should anticipate the many questions that your argument will have made arise in the minds of your audience. Your argument will have made them inquisitive at best, and hostile at worst; assume they are hostile. In order for your evidence to be convincing you will need to address several factors at the same time. First it will need to be thorough, and well presented (the hygienic qualities). Second, it will need to well structured so as to lead the audience through any sub-points (hypothesis) you feel need to be made before concluding. Third, you need anticipate that the reader may have a different perspective to yourself. For example, you may be arguing for artificial intelligence to improve profitability. However, your reader may think the technology is a tool of the rich to oppress others into poverty. It can be very hard to anticipate a readers perspective; the only defence is to know them, at least through their writings.

Be very clear about the "object" of your study. In the example about it was "Artificial Intelligence". Then give considerable thought to what human concerns (forces, worries, interests, fears) underlie the object of your study. Typically these are in some kind of tension. In this example, why have human endeavours created artificial intelligence? What was the concern that drove people to produce this object? It is for the research to choose the concerns that interest them but examples may be "wealth creation" and "intellectual interest". If it cost more to develop the system than it can earn they these concerns are in tension.

The points made above can be summarised by saying, the reasoning and arguments of possible counters to your argument needs to be anticipated. Some counters may be on your supporting evidence, others on the relevance or depth of your argument.

## Own Empirical Evidence

How are you going to collect your empirics? Your own observations might be collected in the form of an interview, action research, or an ethnographic study. Give details of the anticipated methods and expected results. Observations should be designed and recorded in such a way so as to satisfy your worst critic. A discussion of the criticisms (limitations) in the empirics should be anticipated. Remember that usually the more “direct” the empirics, and the more ways they are recorded, the more convincing the research.

*Eg. It is intended to conduct an ethnographic study using in XXX location. It is expected to take ... months, any interview data will be transcribed and coded using NUDIST... etc etc...*

## CONCLUSION, IMPLICATIONS (So what) and SOCIAL ACTION

Comments such as the following often appear in the conclusion.

- *It is thus hoped to show that despite counter claims it appears...*
- *The new evidence collected should extend the previous evidence collected because...*

Think of the “conclusion” as being similar to the “final summation” given to a jury before its deliberations.

The implications of the study might be re-emphasised. These answer the "OK, I agree with you but so-what" questions. To some extent the implications will have been mentioned in the "motivation" section but some reiteration and elaboration can provide a useful conclusion.

*Eg This study is expected to show .... Because...etc etc...The implications of this are that ... Further research on .. is suggested...*

The social action suggested by your research is important (see Habermas and Argyris’s “Theories of Action”). To merely describe and evaluate a social situation is considered inadequate. It maybe OK in the physical science but not when studying human activity. The aim should be to come up with an “improved” way of behaving; a reduction of people’s concerns. Exactly how, should be explained. It is not sufficient to say that “having a better appreciation of the problem” guides future action.

## THE TITLE

Present a short title which contains any key-words that would be used in a computer search for this study.

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